What is claimed is:

1. An exposing apparatus for irradiating desired spots on a substrate to be exposed relatively moving with respect to two or more light sources arranged along the direction of the relative movement to form a desired exposure pattern using the light sources, comprising a control means for controlling the turning-on of only specific light sources out of the two or more light sources at a specific timing.

2. An exposing apparatus, as set forth in claim 1, wherein the control means turns on only specific light sources out of the two or more light sources at a specific timing so that a row of spots is irradiated with light, the interval of which is shorter than the distance covered by the relative movement of a substrate to be exposed during one period of the shortest turning-on controllable period of the light sources.

3. An exposing apparatus, as set forth in claim 2, wherein the control means comprises: a first setting means for setting the interval between neighboring target spots in a row of target spots to be irradiated with light on the substrate to be exposed as a target resolution r0; a second setting means for setting the distance covered by the relative movement of the substrate to be exposed during one period of the shortest turning-on controllable period of the light sources as a step size S; a third setting means for setting the interval of spots, which may be produced when the substrate to be exposed is irradiated with the light emitted from the two or more light sources arranged along the direction of the relative movement, as a spot interval D; a first calculation means for calculating all of the frame numbers f which satisfy

$$0 < f < (i - 1) \times D / S$$

(where, $2 \leqq i \leqq k$)

where the identification numbers of k units of light

sources arranged along the direction of the relative movement are denoted by i = 1, 2, ..., k, respectively, the number of times the turning-on and turning-off of a specific light source can be switched per unit time is denoted by a frame rate F, and the frame number at this time is denoted by f (F and f are integers); a second calculation means for calculating all of the resolution candidates r obtained from

$$r = (i - 1) \times D - f \times S$$

(where, $2 \leqq i \leqq k$)

for all of the sets of the frame number f, the step size S and the spot interval D; and an extracting means for extracting the resolution candidates r within the allowable range of the target resolution r0.

4. An exposing apparatus, as set forth in claim 3, wherein at least one of the step size S set by the second setting means and the spot interval D set by the third setting means is set as a variable within a predetermined range.

5. An exposing apparatus, as set forth in claim 4, further comprising a magnifying or reducing lens system arranged between the actually set light sources and the substrate to be exposed so that the substrate to be exposed is irradiated with the light emitted from the actually set light sources at intervals of the spot interval D when two or more spot intervals D are set by the third setting means within the predetermined range.

6. An exposing apparatus, as set forth in claim 4, wherein the control means controls so that the substrate to be exposed moves relatively with respect to the light sources at a speed covering the step size S per unit time when two or more step sizes S are set by the second setting means within the predetermined range.

7. An exposing apparatus, as set forth in claim 3 or 4, wherein the control means further comprises a storage means for storing the identification number i and

the frame number f of the light source in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting means.

8. An exposing apparatus, as set forth in claim 7, wherein the storage means further stores at least one of the step size S and the spot interval D in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting means.

9. An exposing apparatus, as set forth in claim 7, wherein the control means turns on the light source in accordance with the identification number i stored by the storage means at a timing of the frame number f in accordance with the identification number i.

10. An exposing apparatus, as set forth in claim 3, wherein the control means further comprises a counting means for counting the number of resolution candidates r within the allowable range of the target resolution r0 extracted by the extracting means.

11. An exposing method for irradiating desired spots on a substrate to be exposed relatively moving with respect to two or more light sources arranged along the direction of the relative movement to form a desired exposure pattern using the light sources, wherein only specific light sources out of the two or more light sources are controlled to turn on at a specific timing.

12. An exposing method for irradiating desired spots on a substrate to be exposed relatively moving with respect to two or more light sources arranged along the direction of the relative movement to form a desired exposure pattern using the light sources, wherein a control step is included for controlling the turning-on of only specific light sources out of the two or more light sources at a specific timing, thereby a row of spots is irradiated with light, the interval of which is shorter than the distance covered by the relative

movement of the substrate to be exposed during one period of the shortest turning-on controllable period of the light sources.

13. An exposing method, as set forth in claim 12, wherein the control step comprises: a first setting step for setting the interval between neighboring target spots in a row of target spots to be irradiated with light on the substrate to be exposed as a target resolution r0; a second setting step for setting the distance covered by the relative movement of the substrate to be exposed during one period of the shortest turning-on controllable period of the light sources as a step size S; a third setting step for setting the interval of spots, which may be produced when the substrate to be exposed is irradiated with the light emitted from the two or more light sources arranged along the direction of the relative movement, as a spot interval D; a first calculation step for calculating all of the frame numbers f which satisfy

$$0 < f < (i - 1) \times D / S$$

(where, $2 \leqq i \leqq k$)

where the identification numbers of k units of light sources arranged along the direction of the relative movement are denoted by i = 1, 2, ..., k, respectively, the number of times the turning-on and turning-off of a specific light source can be switched per unit time is denoted by a frame rate F, and the frame number at this time is denoted by f (F and f are integers); a second calculation step for calculating all of the resolution candidates r obtained from

$$r = (i - 1) \times D - f \times S$$

(where, $2 \leqq i \leqq k$)

for all of the sets of the frame number f, the step size S and the spot interval D; and an extracting step for extracting the resolution candidates r within the allowable range of the target resolution r0.

14. An exposing method, as set forth in claim 13, wherein at least one of the step size S set by the second setting step and the spot interval D set by the third setting step is set as a variable within a predetermined range.

15. An exposing method, as set forth in claim 14, further comprising an arranging step for arranging a magnifying or reducing lens system between the actually set light sources and the substrate to be exposed so that the substrate to be exposed is irradiated with the light emitted from the actually set light sources at intervals of the spot interval D when two or more spot intervals D are set by the third setting step within the predetermined range.

16. An exposing method, as set forth in step 14, wherein the control step controls so that the substrate to be exposed moves relatively with respect to the light sources at a speed covering the step size S per unit time when two or more step sizes S are set by the second setting step within the predetermined range.

17. An exposing method, as set forth in claim 13, wherein the control step further comprises a storage step for storing the identification number i and the frame number f in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting step.

18. An exposing method, as set forth in claim 17, wherein the storage step further stores at least one of the step size S and the spot interval D in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting step.

19. An exposing method, as set forth in claim 17, wherein the control step turns on the light source in accordance with the identification number i stored by the storage step at a timing of the frame number f in accordance with the identification number i.

20. An exposing method, as set forth in claim 13, wherein the control step further comprises a counting step for counting the number of resolution candidates r within the allowable range of the target resolution r0 extracted by the extracting step.

21. A plotter for directly plotting on desired spots on an object to be plotted relatively moving with respect to two or more plotting heads arranged along the direction of the relative movement to form a desired plotting pattern using the plotting heads, comprising a control means for controlling to put into plotting operation only specific plotting heads out of the two or more plotting heads at a specific timing.

22. A plotter, as set forth in claim 21, wherein the control means puts into plotting operation only specific plotting heads out of the two or more plotting heads at a specific timing so that a row of spots is directly plotted, the interval of which is shorter than the distance covered by the relative movement of an abject to be plotted during one period of the shortest plotting operation controllable period of the plotting heads.

23. A plotter, as set forth in claim 22, wherein the control means comprises: a first setting means for setting the interval between neighboring target spots in a row of target spots to be directly plotted on the object to be plotted as a target resolution r0; a second setting means for setting the distance covered by the relative movement of the object to be plotted during one period of the shortest plotting operation controllable period of the plotting heads as a step size S; a third setting means for setting the interval of spots, which may be produced when the object to be plotted is directly plotted by the two or more plotting heads arranged along the direction of the relative movement, as a spot interval D; a first calculation means for calculating all of the frame numbers f which satisfy

$$0 < f < (i - 1) \times D / S$$

(where, $2 \leqq i \leqq k$)

where the identification numbers of k units of plotting heads arranged along the direction of the relative movement are denoted by i = 1, 2, ..., k, respectively, the number of times the plotting operation and stopping operation of a specific plotting head can be switched per unit time is denoted by a frame rate F, and the frame number at this time is denoted by f (F and f are integers); a second calculation means for calculating all of the resolution candidates r obtained from

$$r = (i - 1) \times D - f \times S$$

(where, $2 \leqq i \leqq k$)

for all of the sets of the frame number f, the step size S and the spot interval D; and an extracting means for extracting the resolution candidates r within the allowable range of the target resolution r0.

24. A plotter, as set forth in claim 23, wherein the step size S set by the second setting means is set as a variable within a predetermined range.

25. A plotter, as set forth in claim 24, wherein the control means controls so that the object to be directly plotted moves with respect to the plotting heads at a speed covering the step size S per unit time when two or more step sizes S are set by the second setting means within the predetermined range.

26. A plotter, as set forth in claim 23, wherein the control means further comprises a storage means for storing the identification number i and the frame number f of the plotting head in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting means.

27. A plotter, as set forth in claim 26, wherein the storage means further stores the step size S in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by

the extracting means.

28. A plotter, as set forth in claim 26, wherein the control means puts into plotting operation the plotting head in accordance with the identification number i stored by the storage means at a timing of the frame number f in accordance with the identification number i.

29. A plotter, as set forth in claim 23, wherein the control means further comprises a counting means for counting the number of resolution candidates r within the allowable range of the target resolution r0 extracted by the extracting means.

30. A plotter, as set forth in claim 21, wherein the plotting head is an ink-jet head.

31. A plotting method for directly plotting on desired spots on an object to be plotted relatively moving with respect to two or more plotting heads arranged along the direction of the relative movement to form a desired plotting pattern using the plotting heads, wherein only specific plotting heads out of the two or more plotting heads are controlled to start plotting operation at a specific timing.

32. A plotting method, as set forth in claim 31, wherein the plotting head is an ink-jet head.

33. A plotting method for directly plotting on desired spots on an object to be plotted relatively moving with respect to two or more plotting heads arranged along the direction of the relative movement to form a desired plotting pattern using the plotting heads, wherein a control step is included for controlling to put into plotting operation only specific plotting heads out of the two or more plotting heads at a specific timing, thereby a row of spots is directly plotted, the interval of which is shorter than the distance covered by the relative movement of the object to be plotted during one period of the shortest plotting operation controllable period of the plotting heads.

34. A plotting method, as set forth in claim 33, wherein the control step comprises: a first setting step for setting the interval between neighboring target spots in a row of target spots to be directly plotted on the object to be plotted as a target resolution r0; a second setting step for setting the distance covered by the relative movement of the object to be plotted during one period of the shortest plotting operation controllable period of the plotting heads as a step size S; a third setting step for setting the interval of spots, which may be produced when the object to be plotted is directly plotted by two or more plotting heads arranged along the direction of the relative movement, as a spot interval D; a first calculation step for calculating all of the frame numbers f which satisfy

$$0 < f < (i - 1) \times D / S$$

(where, $2 \leqq i \leqq k$)

where the identification numbers of k units of plotting heads arranged along the direction of the relative movement are denoted by i = 1, 2, ..., k, respectively, the number of times the plotting operation and stopping operation of a specific plotting head can be switched per unit time is denoted by a frame rate F, and the frame number at this time is denoted by f (F and f are integers); a second calculation step for calculating all of the resolution candidates r obtained from

$$r = (i - 1) \times D - f \times S$$

(where, $2 \leqq i \leqq k$)

for all of the sets of the frame number f, the step size S and the spot interval D; and an extracting step for extracting the resolution candidates r within the allowable range of the target resolution r0.

35. A plotting method, as set forth in claim 34, wherein the step size S set by the second setting step is set as a variable within a predetermined range.

36. A plotting method, as set forth in claim 35,

wherein the control step controls so that the object to be directly plotted moves with respect to the plotting heads at a speed covering the step size S per unit time when two or more step sizes S are set by the second setting step within the predetermined range.

37. A plotting method, as set forth in claim 34, wherein the control step further comprises a storage step for storing the identification number i and the frame number f of the plotting head in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting step.

38. A plotting method, as set forth in claim 37, wherein the storage step further stores the step size S in accordance with the resolution candidate r within the allowable range of the target resolution r0 extracted by the extracting step.

39. A plotting method, as set forth in claim 37, wherein the control step puts into plotting operation the plotting head in accordance with the identification number i stored by the storage step at a timing of the frame number f in accordance with the identification number i.

40. A plotting method, as set forth in claim 34, wherein the control step further comprises a counting step for counting the number of resolution candidates r within the allowable range of the target resolution r0 extracted by the extracting step.

41. A plotting method, as set forth in claim 33, wherein the plotting head is an ink-jet head.